SECRET

CHAL-0122

Copy 4 of 4

30 May 1958

MEMORANDUM FOR : Special Assistant to the Director for Planning and Development
Deputy Director

THRU : Director of Development and Procurement, DPS

SUBJECT : Study relating to B Camera Reliability

REFERENCES : A. CHAL-0073 dated 20 May 1958
B. CHAL-0156 dated 26 May 1958

1. Reference A covered all B Camera missions up to and including 1409, 18 May 1958. Up to 26 May 5 additional missions were scheduled, the last being C-1763. One of these missions was for training and was reported as successful. The remaining 4 were operational missions from [redacted] (1760A, 1761A, 1762 and 1763). Three of the four missions had malfunctions as follows: 25X1A

A. 1761A - Intermittent shutter operation. Cause unknown.

B. 1762 - Vaccum loss throughout starting with 8th frame (Cause - Vaccum solenoid plunger showed roughness and scoring with tendency to stick). Approximately 40% loss due to shutter mislatching both directions. (Cause - Not stated, however, probably due to trip latch mechanism).

C. 1763 - Although film wrapped around 9L side it did not tear. This occured after approximately 50% of mission. (Cause - Tension sensor inoperative due to micro switch only operating intermittently. In the take up assembly, the roll pin holding large gear to output shaft to motor gear was sheared. This second malfunction



SECRET

could be attributed failure of microswitch. On this mission after landing the 2L window cover was still in place. The belief was stated the cover froze to hatch. Note: SOP is to manually remove cover prior to start of T. O. roll. It is quite possible somebody goffed on this one. [redacted] has been asked to query [redacted] whether SOP was followed.

25X1A
25X1A

2. As to probable causes of malfunctions, I see no reason to change my opinions from those expressed in paragraph 5A of CHAL-0073 dated 20 May 1958. Although in the given reference my remarks were directed towards shutter malfunctions it is equally true for other components. I believe, the major cause of our malfunctions is a total disregard to preventative or periodic maintenance in the detachments. I believe, the philosophy employed by the detachments is simply if the configuration worked in the previous missions don't do anything with it prior to the next mission.

25X1A
25X1A

3. In the absence of [redacted] I talked with [redacted] Hycon 30 May. We discussed all the B malfunctions to date. He agreed paragraph 2 of this memo was correct. I got the impression from this last conversation Hycon is "at wits end" as to steps to take to insure Detachment personnel follow through on directives from them. As a result of our telecon of 30 May 1958 Hycon sent out 3 messages to the Detachments [redacted] 5464 (IN 40368), [redacted] 5465 (IN 40369) [redacted] 5466 (IN 40370) and [redacted] 5491.

25X1A
25X1A
25X1A

25X1A
25X1A
25X1A

4. Paragraph 2 of [redacted] 5465 comes closest to my recommendation stated in the first sentence under Action of paragraph 6 B of Trip Report to West Coast week of 23 February 1958 ([redacted] 24714 dated 28 February 1958). I mentioned to [redacted] my feeling that inspections should take place prior to every operational mission rather than every 10,000 cycles. (For information purposes a mission using two full rolls of 4000' film has approximately 2,700 cycles; 6000' rolls approximately 4200 cycles). It becomes evident even 10,000 cycles periodic checks are not satisfactory. Hycon has always objected to these detailed checks before each mission. The main reasons being:

A. It is too time consuming.

B. It is unnecessary. If configuration operated well in last mission, checking out its components prior to next mission may well increase probability of malfunction due to error in readjustment or reassembly.

5. None of the above two reasons have any merit. My rebuttal is as follows:

A. Time consuming - True, a thorough check takes a maximum of about 4 hours, however, sufficient personnel are available (each detachment is authorized and have or will have 10 technicians). Each detachment now has 3 B configurations therefore while one is flying another can be given a thorough check out in preparation for next



SECRET

mission. We should keep in mind Col. Beerlis statement to the Headquarters Photographic Team that activity and not R and R is the key to high morale.

B. Not necessary - I am sure there have been occasions when a configuration after a successful mission has laid idle for a lengthy period of time and because it was successful no periodic check was given during the idle time. When this configuration was committed although it did pre-flight properly, the camera failed during the mission. I don't believe Hycon's fear of increasing probability of malfunction is valid. In actual practice the increase of periodic check or preventative maintenance will increase the proficiency of the technicians and will make them increasingly aware of the complexities of the equipment and the possible areas of malfunctions. We can well afford to ingrain in the photo technicians mind the thought that although the number of operational missions will be less the importance of each being totally successful becomes greater, consequently if the photo technician has any doubts as to condition of any component he should replace it. Hycon assured me they have a backup of adequate spare parts.

6. Conclusion and Recommendations

A. Hycon even at this late date has very little control over the overseas detachments. There is no way Hycon can be certain their directives or recommendations are being executed by their Detachment Supervisors. Hycon must depend upon their Supervisors who in turn must rely upon their subordinates. It is at this point the system breaks down. The lack of attention to detail on the part of the technicians during pre-flight or maintenainance can be easily missed by the supervisors cursary inspection.

B. We should take stronger action to indicate our desires for more frequent and rigid inspections and we should take steps through the Detachment Commanders to accomplish this. It can be done in two ways. First, To have the Project Director send a RYBAT message to the Commanders informing them of our convern as to "B" performance and to be personally satisfied each configuration is given a detailed checkout prior to each operational mission. The second method is to have a Project Headquarters representative, during a trial period work with the Detachment Commander. The representative presence would emphasize our concern and interest in the problems involved. In addition, he should be prepared to give a concise and factual presentation of numbers and types of malfunctions encountered to both detachments. He should note technical differences between Hycon and detachments. Most important the Headquarters representative should be present in the photo configuration room to assure all concerned that configurations are indeed thoroughly checked prior to each mission.

SECRET

C. A procedure such as outlined above will be needed to determine the validity of arguments put forth by Hycon, the Detachments and the undersigned. Very briefly, the arguments are as follows: The undersigned believes Hycon now is of the opinion malfunctions are mainly due to lack of attention upon the Photo Detachments part. This fact, I'm sure, has not been too widely advertised by Hycon. The Photo Detachments feel it is the quality of the equipment's components which are causing failures. An interesting sidelight on this facet was brought forth 25X1A by [redacted] of Hycon last week. While discussing the vacuum valve solenoid, Al stated during factory tests this item checked out well over 25,000 cycles; however, it wasn't until quite recently the man running the test, upon questioning, indicated the valve after 25,000 cycles showed metal dust which he wiped off and then used a lubricant during the remainder of the test. His report indicated only the number of cycles the solenoid ran and not what he did during the tests. The undersigned has always indicated our biggest problem is personnel. Specifically, attitude of the technicians. Overseas, our Photo Sections are called "Special Equipment Sections". I don't believe they realize it is special equipment requiring more care than normal G.I. equipment. I am beginning to have doubts whether the people understand the equipment. The "if it works, let it alone" attitude may be an indication of this.

7. The following additional procedures have been established to increase Detachment reliability and photo quality record.

A. Photo Interpreters at both Detachments have been instructed to immediately notify photo supervisors of equipment malfunctions or deterioration of image quality.

B. Messages from Detachments indicating malfunctions, fixes and recommendations are interchanged.

C. P & E is receiving copies of Detachment messages.

8. It is further recommended Headquarters not take action as recommended in paragraph 6B until the Detachments have had an opportunity to:

A. Take action on messages cited in paragraph 3; and
B. Take advantage of the additional procedures cited in paragraph 7 of this memorandum.

25X1A DPS/DCI: [redacted] :bas

Distribution:
Orig - SA/PD/DCI; & Dep.Dir.
2 - Dir. of D & P, DPS
25X1A 3 - [redacted]
✓4 - Chrono (Contracts)

[redacted] 25X1A

- 4 -

SECRET